

A Risk Communication Success Story

Keith Peecook

NASA Plum Brook Station, 6100 Columbus Ave, Sandusky, OH, 44089, keith.m.peecook@nasa.gov

INTRODUCTION

A key success of the decommissioning effort at the National Aeronautics and Space Administration's (NASA's) Plum Brook Reactor Facility (PBRF) has been the public outreach program. The approach has been based on risk communications rather than a public relations approach. As a result it has kept the public feeling more involved in the process. It ensures they have the information needed to understand the project and its goals, and to make recommendations. All this is done so that NASA can better plan and execute the necessary work without delays or surprises.

PBRF BACKGROUND

NASA has two Nuclear Regulatory Commission (NRC) licensed test reactors at PBRF. The main unit is a 60 MW pressurized water reactor, and the smaller is a 100 KW swimming pool type. The plants began operation in 1961, performing neutron flux irradiation experiments on materials for the NERVA and ROVER nuclear rocket programs. Post irradiation analysis was performed in one of seven hot cells.

PBRF was shutdown in 1973 and placed in Safe Dry Storage. In 1999 NASA began predecommissioning. Full decommissioning began in 2002 with the NRC approval of the Decommissioning Plan. NASA expects to finish field work in 2010, then to request license termination for unrestricted future use after Final Status Survey (FSS) completion in 2011. Demolition of structures and site restoration to a green field will be in 2013.

BEGINNING STEPS

NASA recognized early on that having the support of the community would be critical to a successful decommissioning. FOCUS GROUP, Inc, was hired to be the project's partner in this effort, and

to use risk perception and risk communications to enable NASA to be seen as a credible source of information. To accomplish this it was important to 'get out early' with information about the decommissioning, in advance of the formation of negative opinions or beliefs forming. At the same time this had to be balanced with the potential for raising undue concern in a mostly unaware population.

Stakeholder identification was used to define the needs and structure of the outreach program in 1998 – 1999, prior to the start of the decommissioning. Nearly 40 interviews were conducted with retired and former workers, local officials, and local residents. The interviews covered stakeholder awareness, perceptions, concerns and information needs and preferred channels.

One point that came out loud and clear was that most of the public had no idea what went on "behind the fence" at NASA, and the very existence of a mothballed nuclear reactor came as an unpleasant surprise. The results of the interviews were used to create a comprehensive Community Involvement Plan, which detailed a mix of communications vehicles.

COMMUNITY WORK GROUP

Another key outcome of the stakeholder interviews was that community members would trust information coming from respected neighbors and local leaders. At FOCUS GROUP's suggestion NASA decided to form a Community Work Group (CWG). While there is no regulatory requirement for such an effort this has proven to be our communication backbone, and has been time and money well spent.

The CWG does not have approval authority over the decommissioning project's operations. Instead it is a means of providing two way communications between the project and the public. NASA provides information, including project status and plans. The

CWG members are able to raise questions and concerns. The members in turn have carried this two way flow into the local community, carrying information to friends and neighbors while bringing the broader public's issues back to the workgroup.

It is worth looking at an early example of how this worked out in practice. NASA made it known through the CWG that it planned on having waste shipments leave its facility through its south gate, which was closest to the turnpike and meant that trucks would not be passing through a residential area. The CWG responded with a concern for students at a vocational school located near the gate, and requested another route. Based on this request NASA put a gate on the east side of the property back into operation, which was a bit farther from the turnpike, but which avoided both residential areas and the school. By communicating intentions ahead of time NASA gave the community time to absorb the information, and bring up their concerns. Since there was adequate lead time NASA was easily able to accommodate the neighbor's concerns. The public felt that they had some voice in the process, which increased their comfort with the project and improved their view of NASA's openness.

The CWG has typically had 10 members. These volunteers have been local residents including emergency responders, educators, health professionals, nearby neighbors, and members of environmental, religious, and minority communities. Many have been active in other community boards and associations, and are well known in the local community. There has been a slightly more than 50% turnover of the membership over nearly 11 years of meetings. One task given to FOCUS GROUP is to keep a list of potential CWG members so that when someone resigns we can quickly fill the opening.

CWG meetings are open to the public and media, and are advertised in newspapers and on the radio. The location is rotated among local schools and churches, moving between different area cities to make it easy for all local citizens to attend. They were held quarterly until the last two years of the project where the decrease in the amount of new activities has allowed us to slow to three, then two annual meetings.

PROJECT ROLL OUT AND PREDECOMMISSIONING

The CWG is only one element of the decommissioning project's public outreach effort. While NASA knew that people feel less risk from something they are familiar with, we had also learned from the focus group results that the public didn't know what went on 'behind the fence'. At the same time the CWG effort was getting started NASA held a public introduction to the entire station. A 'Media Day' was put on for all branches of the local press, followed by a PBS Public Open House. This included tours of the various test facilities, and a drive by of the reactor. Decommissioning was introduced as a part of this overall presentation. The key messages were emphasized throughout – NASA's priorities for the project were the safety of the public, the environment, and the workers. In addition, NASA was committed to communication with the public. Finally, while PBRF was being decommissioned there were four other non-nuclear test facilities that were to remain active.

OTHER INFORMATION CHANNELS

Multiple channels are needed for getting a message out. People vary in how they most effectively receive information; some prefer verbal, some written, some a combination. Telling someone something once will likely have no lasting impression – the goal is for them to get the information at least three times. The more times and more ways that a message is transmitted the more likely the information will be received. While the CWG was the real communications workhorse there were several other channels as well.

The project established a Community Information Bank at the library of a local community college. This contained all project plans, reports, and documents and was available to the public. This bank has been kept up to date throughout the project. In this way a hard copy of all project documents was available to the public at all times, at an independent location.

"Fact Sheets", one page documents that addressed issues such as "Decontamination Technology", "Waste Shipments", and "FSS" have been produced whenever a new activity was taking place that NASA

wanted to inform and educate the public on. These have been handed out at all public events, and have been mailed out upon request.

A project website, www.grc.nasa.gov/WWW/pbrf, was set up. Slide presentations from recent CWG meetings are posted on the site, as well as Fact Sheets, project description and summary, and certain project documents. People visiting the site also have the ability to send in questions or to get on the project mailing list. A note here on changing technology – this was all set up in the 2000 time frame. If we were starting today we would probably include Twitter and a Facebook page!

A Project Update phone line, 1-800-260-3838 has been maintained. A two to three minute recording gave the status of the project. This was updated as events progressed with the decommissioning, typically every two to three weeks. There was also a menu selection for people to leave a question as a message, or to ask to be put on our mailing list.

Quarterly Newsletters were prepared giving regular updates for the project. These four page mailers have been very popular with local residents, government officials, and even with PBRF retirees living out of state who wanted to keep up with the project. Over 1,200 people are on the mailing list. Besides updates on the project there have been stories on the CWG members, updates from the other test facilities on station, even coverage of retiree activities.

Community Information Sessions have been held once a year. These were large “show and tell” type meetings with display boards, artifacts, and a project update presentation. These were very popular with local high school science teachers who assigned their classes to attend! For the first several years a “Media Day” was also held the morning of the CIS to get the information out to those members of the press not attending the meeting. A lot of positive coverage resulted from the effort, and NASA had a better chance to get its message out as part of the story.

THE SETUP

All of this effort to keep the public informed and involved was intended to establish NASA as an open and honest source of information. We worked hard to establish and earn the public’s trust. The results of this effort were put to the test five years after we

started the risk communication effort.

In August 2005 Cs-137 was found off of NASA property, in Plum Brook. The area impacted included a mixture of agricultural, residential, and recreational property. NASA had performed environmental monitoring over the operating and shutdown years and had not detected any contaminants that far from the plant. Characterization work with Final Status Survey level instruments told a different story.

During operations the permitted discharge path from the plant was out into Pentolite Ditch (an open road cut ditch) which flowed 1 km to Plum Brook, at the PBS fence line. From there the brook flowed 6 km to Lake Erie. The Cs-137 had built up over the years in the clay silt of Pentolite Ditch, and had slowly been eroding and redepositing down the ditch and into the brook as it worked its way through private property to Lake Erie. Detected levels were low (isolated spots in the 10 – 30 pCi/g range), but were definitely above background (.5 pCi/g). NASA needed time to do a complete characterization, and to plan an appropriate remediation.

THE PAYOFF

This is when all the hard work in risk communication paid off. NASA immediately notified federal, state, and local regulators and officials. We also put out the information through all its preexisting channels, including contacting CWG members, and updating the 800 number and the website. Letters explaining the situation were sent to the neighbors along Plum Brook. All of these gave the information we did have (isolated low level contamination on private property, but no public health risk existed), the plans for what we were going to do (additional sampling), how long it would take (several months), and the assurance that NASA would continue to provide information as it became available, and would do what was necessary to insure the public safety.

Without the prior work with the public the result could have been a publicity disaster for NASA, and might have resulted in calls for more stringent (and costly) than necessary sampling and remediation activities. Instead, the public viewed us a trustworthy source, and concurred that there was no public health

risk. They did emphasize their desire to be kept informed, but overall they took us at our word that we would do what was necessary to protect them.

Because of this, NASA had the time to do a well developed and thought out characterization, to understand the situation properly and determine a reasonable remediation approach. The overall effort resulted in 2,400 samples over a 1 ½ year period. Regular updates of the results were given throughout that period, including written reports sent to all of the affected property owners.

In short, the pattern of isolated elevated pockets of Cs-137 continued down the length of the brook. Given an average concentration for the samples of 1.5 pCi/g, however, and a dose analysis that demonstrates less than 1 mrem/year additional above background to a resident living along the brook from the contamination NASA has been able to prove its initial judgment that no public health risk exists. Even so NASA is planning to perform an ALARA cleanup effort in the brook this summer, using a bucket and shovel brigade to dig up the few isolated elevated spots. In this way we are taking the necessary steps to remove even the small added dose the Cs-137 might produce.

SUMMARY – THE TRUST BANK

Think of this example as taking a withdrawal from the “trust bank”. The trick is, you have to have made deposits in advance through early and consistent efforts to establish and maintain your openness and credibility. If you only communicate when there is already an issue it’s too late, and you may be dealing with an angry and cynical public. The result in this case might have been calls for more sampling and clean up than was actually needed to protect the public. The financial cost may have been many times what was spent for our outreach efforts. The damage to NASA’s reputation would have ultimately been even higher.